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NRO REVIEW COMPLETED

25 November 1959

RECIPIENT FOR: Deputy Director (Plans)
REASON: Acting Chief, DDCI-2D/P
SUBJECT: The Discoverer Series - COMINT - ASIDE

1. This memorandum contains no recommendations as such, but is intended to provide background information only by personal thinking for our meeting with you leading up to the COMINT Progress Review meeting on Monday.

2. The subject of the Monday meeting is, of course, what should be done now in the Discoverer program failing, as we are, the reported failures in the payload and recovery areas.

3. This problem, as we have proposed in the agenda, is broken down under the following topics:

FOR TECHNICAL SECTION:

- A. Review of last flights - Definition of problem areas (LNSD)
- B. Design changes for 1960 prime programs, both in vehicle and payload. (LNSD)

FOR EXECUTIVE SECTION:

1. Future Test Program (LNSD)
2. Future schedule of Discoverer Series
3. Estimated Cost of 1960 COMINT (LNSD)
4. Discussion and, if possible, resolution of problems relating to contractor relationships in payload area. (LNSD)

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4. The scheduling discussion divides logically into two questions -- the first being the launches that should be attempted during December and January, and the second, the schedule for the balance of 1960.

5. There are now eight (8) vehicles and six (6) cameras left over from the 1959 program with an additional 77 "SOS" cameras which is useful for testing purposes only. In COMINT Plans, there are planned, as you know, eight (8) vehicles and eight (8) cameras, of which some have been built. On top of this, there are planned four (4) operational ASGUS vehicles and cameras. Thus, all told, there are ten (10) extra vehicles, fourteen (14) COMINT cameras and vehicles, and the four (4) ASGUS cameras and vehicles. Assuming two (2) launches per month starting in February, the 1959 program cameras are fired by April 30 and the COMINT [REDACTED] photo carry through [REDACTED] ILLEGIB October 1960.

6. For cover purposes, there are on hand at present a telemetry payload and a so-called SOS payload (see [REDACTED] INCOMING 1023). In addition, flying along in late January or early February are two (2) pie-and payloads designed to carry monkeys.

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7. It seems to me that the following criteria should be adopted in solving the scheduling problem:

- (a) Prior to the resumption of camera shots, every effort should be made to perfect recovery, and this should be done through payloads carried by the two extra 1959 vehicles.
- (b) Another camera should not be fired until the cause of malfunction is known and fixed.
- (c) All six 1959 cameras should be fired during an acceptable season from the standpoint of latitude exposed to sun angle (the values here are suggested to be 55 degrees North latitude and a 15 degree sun angle in the first week of February, or a 40 degree latitude and a 15 degree sun angle by the middle of February).
- (d) There is a need for cover information from firings but this need is secondary to the requirement of perfected recovery.
- (e) COMINT shots have priority over ASGUS shots but provision should be made for ASGUS during the 1960 summer schedule.

8. If these criteria or assumptions are valid, the future schedule should look as follows:

- (a) No camera shots in December and January, during which period the camera malfunction is, we hope, fixed.
- (b) The firings should be made in December and January with

the emphasis primarily on instrumentation to perfect recovery. Preliminary to these, the adequacy of the system should be reviewed including the inflight recovery and fleet recovery. (two boats make up the last fleet.) If possible, CID equipment should also be included to provide cover data.

- (c) Assuming successful recovery, no cover shots after February 1st. This will eliminate the Bio-Notes from the series.
- (d) The six (6) remaining 1959 cameras should be fired in February, March, and April.
- (e) After May 1st, the following schedule:

May	- 2 CORONA Prime
June	- 2 CORONA Prime
July	- 1 CORONA Prime and 1 ARROW
August	- 1 CORONA Prime and 1 ARROW
September	- 1 CORONA Prime and 1 ARROW
October	- 1 CORONA Prime and 1 ARROW
TOTAL 6 CORONA Prime and 4 ARROW	

- (f) If the turn around time on the launch pads improves, as SAC thinks that it might, the improvement should accrue to the benefit of CORONA Prime. Thus, if in July and August five (5) shots are possible, three (3) should be CORONA and two (2) ARROW.

2. TESTING IN PAYLOAD AREA:

Mr. Siefer will present his views on this subject. It should be remembered that during December and January, the tougher Polyester film will be available from [REDACTED] During these two months at least this film should be thoroughly tested as part of the program which should be agreed upon at least in gross outline at Henley's meeting.

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10. Certainly the two months slowdown should provide the opportunity for a relatively unburdened review of what has been done, what has gone wrong, and what should be done.

11. MISSION CHANGES FOR 1960 - CORONA/ARROW:

We have very little information as to the contractors' thinking

on the subject which will, of course, be presented at the meeting. We do know, however, that extra payload is available with the new Agema and that a two-day operation is being considered. This will be fine if we have had a fair measure of success by May 1st. If we have not succeeded by then, a compromise of more film and more telemetry would soon prove sensible.

12. ESTIMATED COST OF CONNEX:

I have asked Lockheed to come up with these figures at the meeting so that you will have an appreciation of the estimated cost through completion of the 1969 Connex Series on the black side. As you know, our estimate [redacted] predicted as the cost of the testing-fix program growing out of the Shagford-Lister Committee recommendations.

13. CONTRACTOR RELATIONSHIP:

Lockheed, Itel and Fairchild have been informed that Fairchild in place of Itel will perform the testing of the AS2000 cameras and that this question remains open with regard to Connex Prime until after we receive Itel's proposals. The latter may or may not be ready by next Monday. Accordingly, depending on their readiness, you may or may not wish to get into a discussion of this controversial subject at the meeting.

[redacted]
Chief, Development Branch

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DPD-DD/P: [redacted]
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